

## ABSTRACT OF THE DISCLOSURE

Method and apparatus for two-user joint demodulation in a system having transmit diversity. A receiver includes at least a detector unit and a channel estimation unit, and exploits transmit diversity employed by at least one of two users or transmitters on a channel. Symbol detection and channel estimation are performed in block or batch fashion, or recursively on a symbol-by-symbol basis. Joint detection makes use of transmit diversity by at least one of the transmitting users. Channel estimates can be updated using channel tracking. If the signals from the first user and the second user are asynchronous, detection can be accomplished in part through reference to a pulse-shape component. The receiver may be incorporated into a mobile communication terminal.